NORTH AMERICAN TECHNOLOGY AND INDUSTRIAL BASE ORGANIZATION

NATIBO

Operations & 3 Year Business Plan

Revision: 27 April 2009

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Outline

- Background
- Organization
- NATIBO Products & Services
  - Memorandum of Understanding
  - Studies & Assessments
  - Advocacy Activities
- Work Plans
- Summary

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Background

- **Joint Canadian DND - US DoD Organization**
- **1987 NATIBO Charter with 1994, 1997 revisions**
  - "promote…and…execute…DoD and DND technology and industrial base programs and *policies*"
  - "foster cooperation…in development of coordinated technology and IB policies…that promote the *integration of the defense and commercial industrial sector*"
  - "ensure that North American technology and IB considerations are taken into account during US or Canadian *military or civilian* planning emergencies

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Background

Mission

In support of North American national security, the NATIBO facilitates technology and industrial base efforts between the U.S. and Canadian Defense Departments

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Background

- NATIB Memorandum of Understanding (MOU) signed May 2001
- Covers NATIBO Activities
  - Coordination of technology & industrial base activities
  - Development and evaluation of demonstrators/prototypes
  - Integration of defense & commercial industrial sectors
  - Technology insertion and industrial base data projects
  - Studies/Assessments
- Facilitates Information Exchange, Working Groups and Project Arrangements
- MOU allows assignment of Cooperative Project Personnel and contracting on behalf of the other nation

Organization
Steering Committee

- **Appointment**
  - "Each Participant in the NATIBO MOU will appoint its national Steering Committee (SC) Co-Chair"
  - "Each Participant (through its MOU Co-Chair) will select members of the NATIBO MOU SC"
- **Responsibilities**
  - Meet no less than annually
  - Approval authority for Working Groups and Project Arrangements under the NATIBO MOU
  - Advocacy and education
  - Developing MOU processes, monitoring their effectiveness and recommending/implementing improvements
- **Resources**
  - Personnel
    - Dedicated support limited to Secretariat
    - Collateral responsibility for others assigned
  - No budgeted funding line in place (funding provided by participants on a project-by-project basis)

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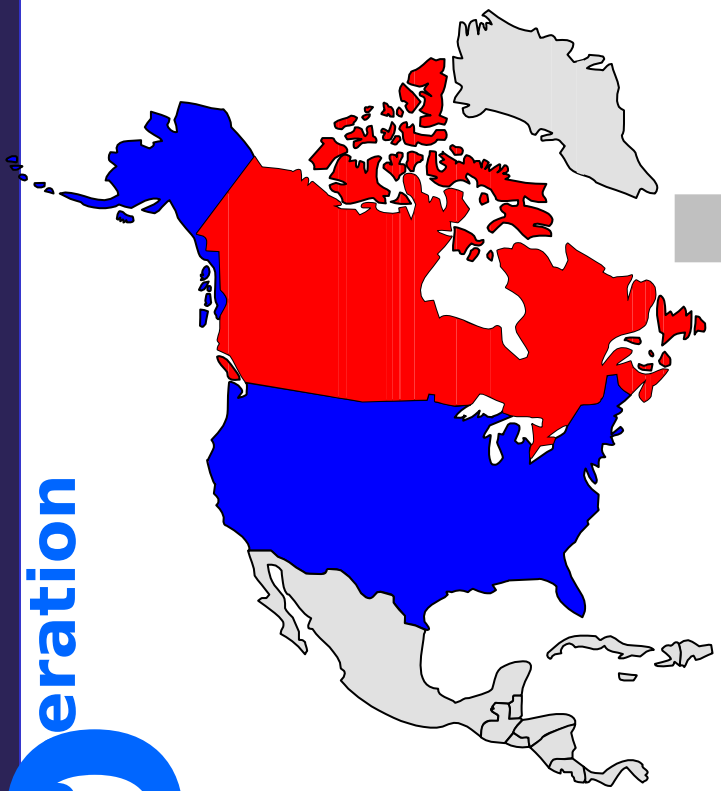
Organization

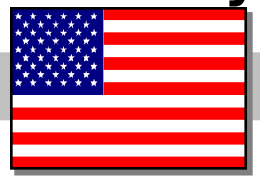
Steering Committee - Principals



Canada

Co-Chair: DND (DG International & Industry Programs)

U.S



Co-Chair: USD(AT&L), Office of Technology Transition

- Army
- Navy
- Air Force
- Missile Defense Agency
- Defense Logistics Agency
- DCMA

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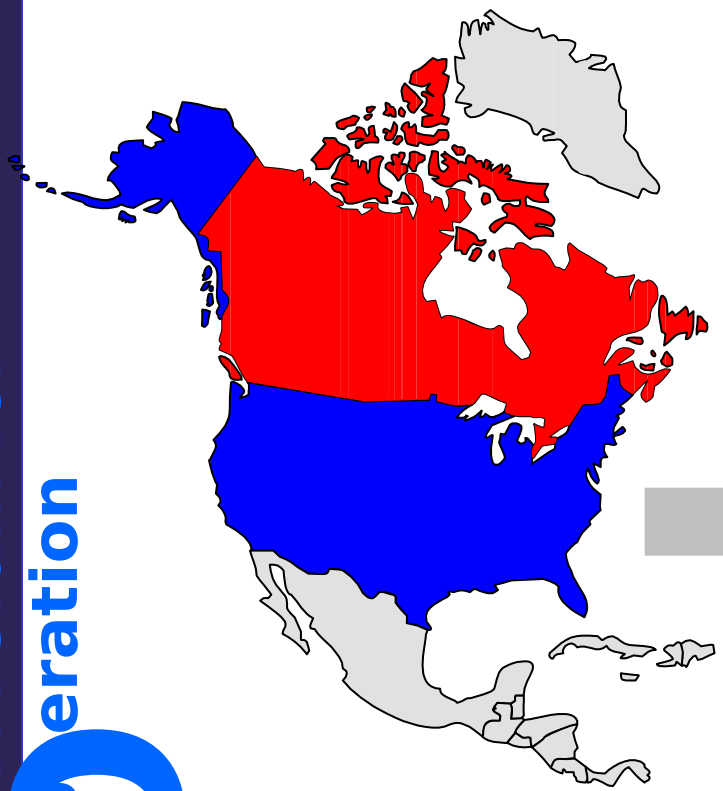
Organization

Steering Committee – Key Players



Canada

- **DND: Canadian Defence Liaison Staff (Washington) and Director Industry Relations, Analysis and Policy/DGIIP**
- **Defence Research Development Canada (DRDC)**

U.S

- **ASD(HD)**
- **USD(AT&L), International Cooperation**
- **USD(AT&L), Industrial Policy**
- **JCS**

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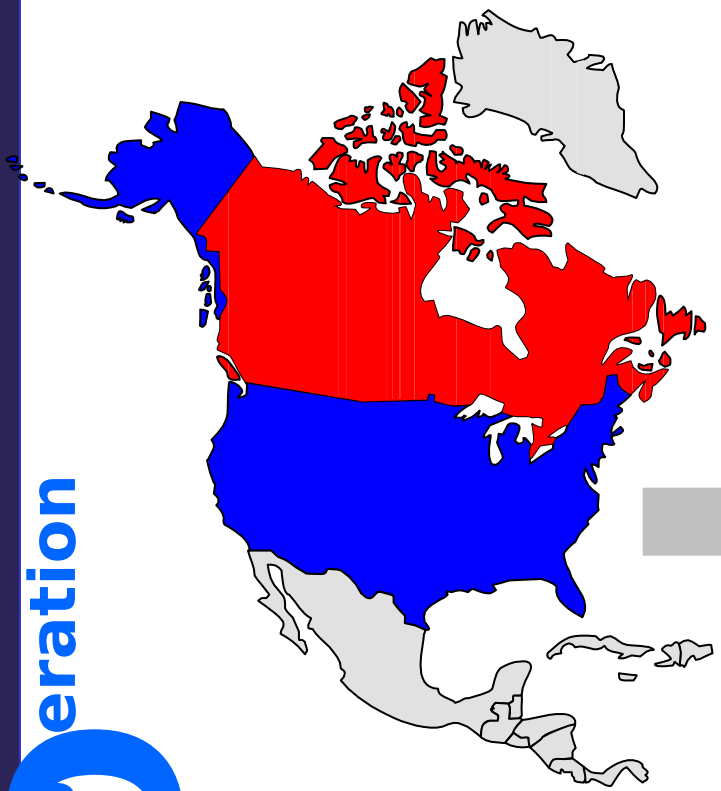
Organization

Steering Committee - Observers



Canada

- Industry Canada
- Canadian Commercial Corp.
- Public Works & Government Services Canada

U.S

- Department of Homeland Security
- Department of Commerce

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Organization
Secretariat

- **Appointment**
  - Selected by both Participants in support of the NATIBO MOU
  - US Army RDECOM has been NATIBO Secretariat since 1987
  - Secretariat is currently staffed by DoD (jointly funded by Services and DND)
- **Responsibilities**
  - Preparation for and coordination of meeting agendas, minutes and action items
  - Maintain all NATIBO related documentation and correspondence
  - MOU details Secretariat responsibilities including keeping an inventory of all project background and foreground information exchanged between the participants

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Organization

Business Development Working Group (BDWG)

- NATIBO Steering Committee created BDWG to:
  - Identify areas for collaborative activities
  - Promote and facilitate the use of the MOU for executing collaborative project arrangements
  - Assist potential users in developing and staffing the documents necessary to initiate an international project arrangement
- BDWG Points of Contact:
  - US Army rock-natibo@army.mil
  - US Navy onrmantech@onr.navy.mil
  - US Air Force natibo@af.mil
  - DCMA, DLA, MDA
  - OSD natibo@osd.mil
  - DND Dundas.sw@forces.gc.ca

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Products & Services

Memorandum of Understanding (MOU)

- **Information Exchange**
  - Includes reports, briefing material, and technical data (both hard copy and electronic)
  - WGs must submit list of exchanged documents to Secretariat on annual basis
- **Controlled/Classified**
  - Controlled Unclassified: Must be marked. Limited to Project Information use only.
  - Classified: Up to SECRET. Must comply with Department Guidelines and Procedures

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Products & Services

Memorandum of Understanding (MOU)

- **Working Groups**
  - "Sub-committees and WGs, ... may be established by the SC with concurrence of the participants. They will be established to address specific areas of concern and propose courses of action to the SC for assigned tasks"
  - Require approved ***Terms of Reference (TOR)***
  - Provide annual status to Steering Committee
- **Terms of Reference:**
  - Defines intent to work under the NATIBO MOU
  - Formally establishes a Working Group
  - Identifies who is involved
  - Provides a scope of activity
  - Outlines any specific responsibilities
  - Obtains Co-Chair approval for the effort
- **Format and example available on NATIBO Website**

Products & Services

Memorandum of Understanding (MOU)

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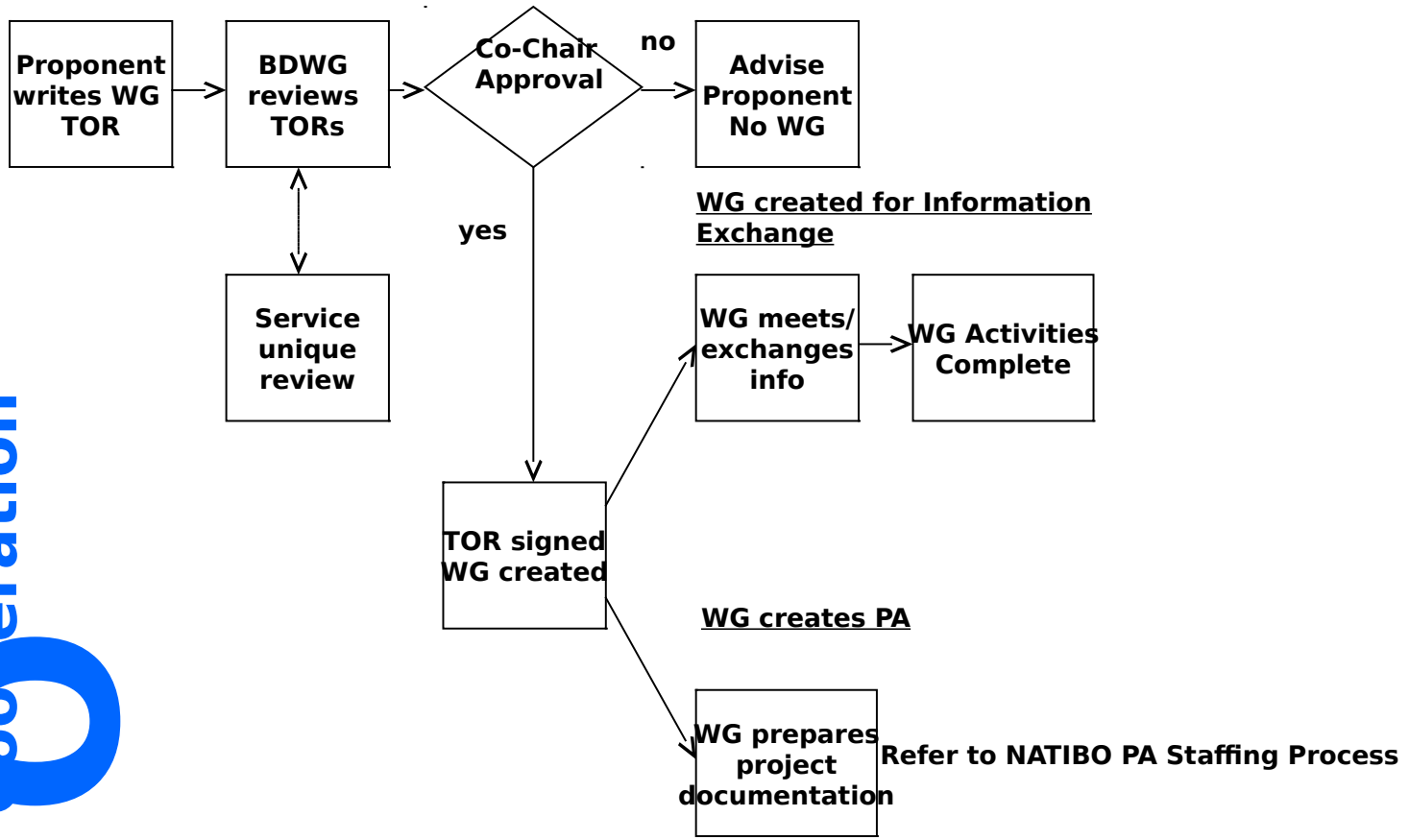
Overall NATIBO TOR Approval Process



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Products & Services

Memorandum of Understanding (MOU)

Current Working Groups & Date Established

- Light Armored Vehicle — July 2001*
- Multi-Service Regenerative Fuel Cell — Oct 2001
- Gas Turbine Engine IBA — July 2002*
- First Responder Technology — Dec 2002*
- Soldier System Technology — Jan 2003
- Future Fire Control Systems — Jan 2003
- Med Support Vehicle System — Mar 2003
- Tactical Communication & Info Systems Modeling — Apr 2004*
- Homeland Defense Technologies — Apr 2005
- Critical Infrastructure Protection — Jan 2006
- Infantry Soldier Modernization — Jun 2008

* TOR concluded, term expired

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Products & Services
Memorandum of Understanding (MOU)

- **Project Arrangements**
  - "Leverage resources through cost sharing and economies of scale afforded through coordinated studies and projects"
  - Historically funded by mutually acceptable amounts from Services and DND
  - "Each Participant will bear its equitable share of the total estimated cost of each NATIB PA and will receive an equitable share of the results, in accordance with the provisions of this MOU and the applicable NATIB PA."
    - Equitability is evaluated on a case-by-case basis
    - Equitability issues are part of the project/PA negotiation process
  - All PAs are required to go through organizations (Services) International Program Offices

Products & Services

Memorandum of Understanding (MOU)

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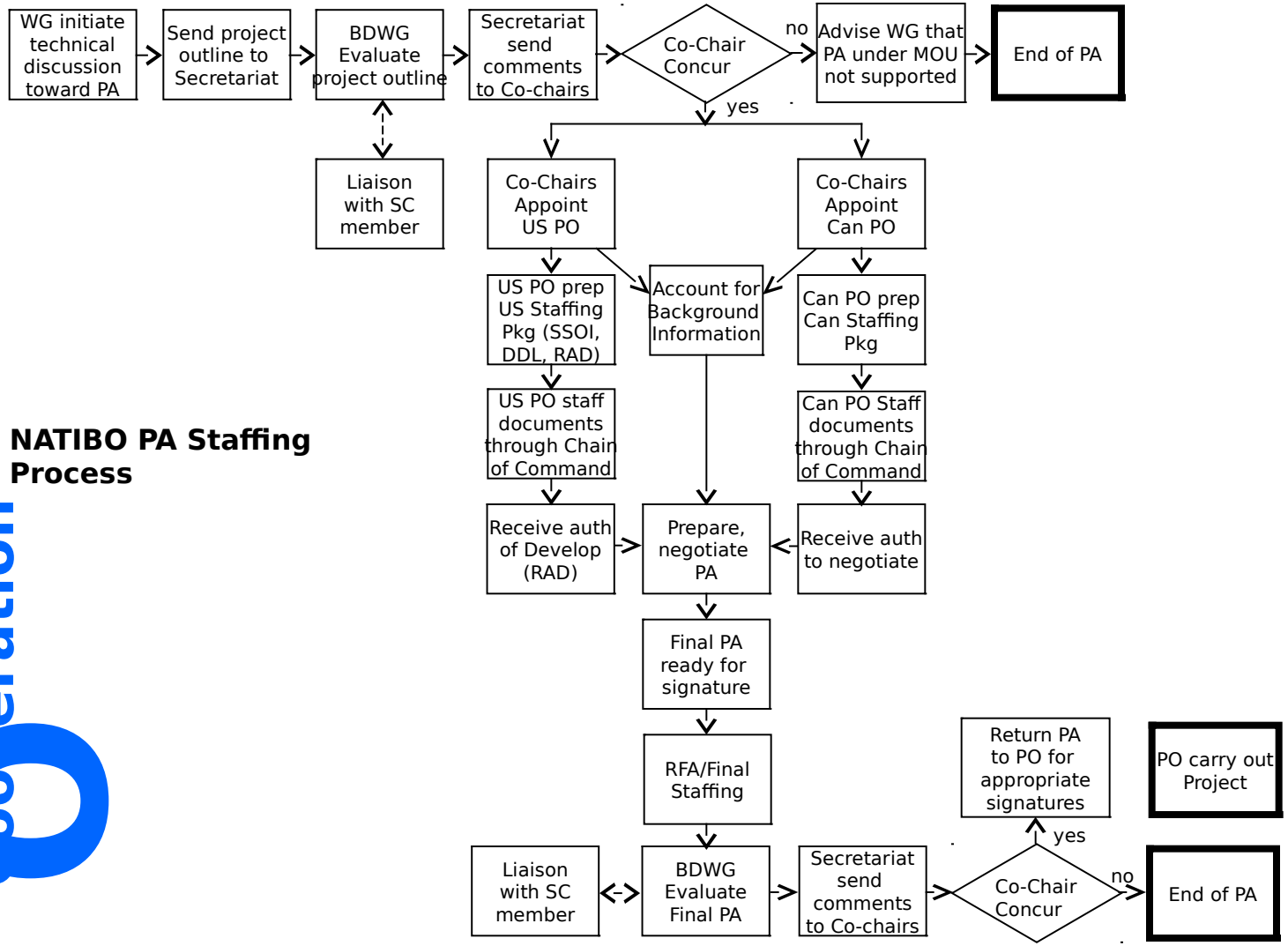
NATIBO PA Staffing Process


WG initiate technical discussion toward PA
Send project outline to Secretariat
BDWG Evaluate project outline
Secretariat send comments to Co-chairs
Co-Chair Concur
no
Advise WG that PA under MOU not supported
End of PA
yes
Liaison with SC member
Co-Chairs Appoint US PO
Co-Chairs Appoint Can PO
US PO prep US Staffing Pkg (SSOI, DDL, RAD)
Account for Background Information
Can PO prep Can Staffing Pkg
US PO staff documents through Chain of Command
Can PO Staff documents through Chain of Command
Receive auth of Develop (RAD)
Prepare, negotiate PA
Receive auth to negotiate
Final PA ready for signature
RFA/Final Staffing
Return PA to PO for appropriate signatures
PO carry out Project
yes
Liaison with SC member
BDWG Evaluate Final PA
Secretariat send comments to Co-chairs
Co-Chair Concur
no
End of PA

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Products & Services
Studies and Assessments

- **History**
  - Conceptual framework for “Technology Base Enhancement Program” initiated in 1991
  - Program formalized in 1992
  - Joint investment thru FY08, approx. $11M
- **Scope**
  - Survey North American technology and industrial base capabilities
  - Analyze technology maturity and to what extent it has transitioned to a production environment
  - Identify future trends/problems
  - Develop roadmaps of collaborative initiatives (both investment and non-investment)
- **Process**
  - Originated by NATIBO (usually conducted by BDWG)
  - Sponsored by NATIBO (may require establishing a Working Group)

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Products & Services
Studies and Assessments

Considerations for Selection:

- Critical to defense requirements
- Pervasive use by Services and Canadian Forces
- Commercial leverage (“Dual-use”)
- Status of technology vis-à-vis international competition
- Force multiplier
- Need for government action
- Affordability of the technology
- High potential payback from minimum resources

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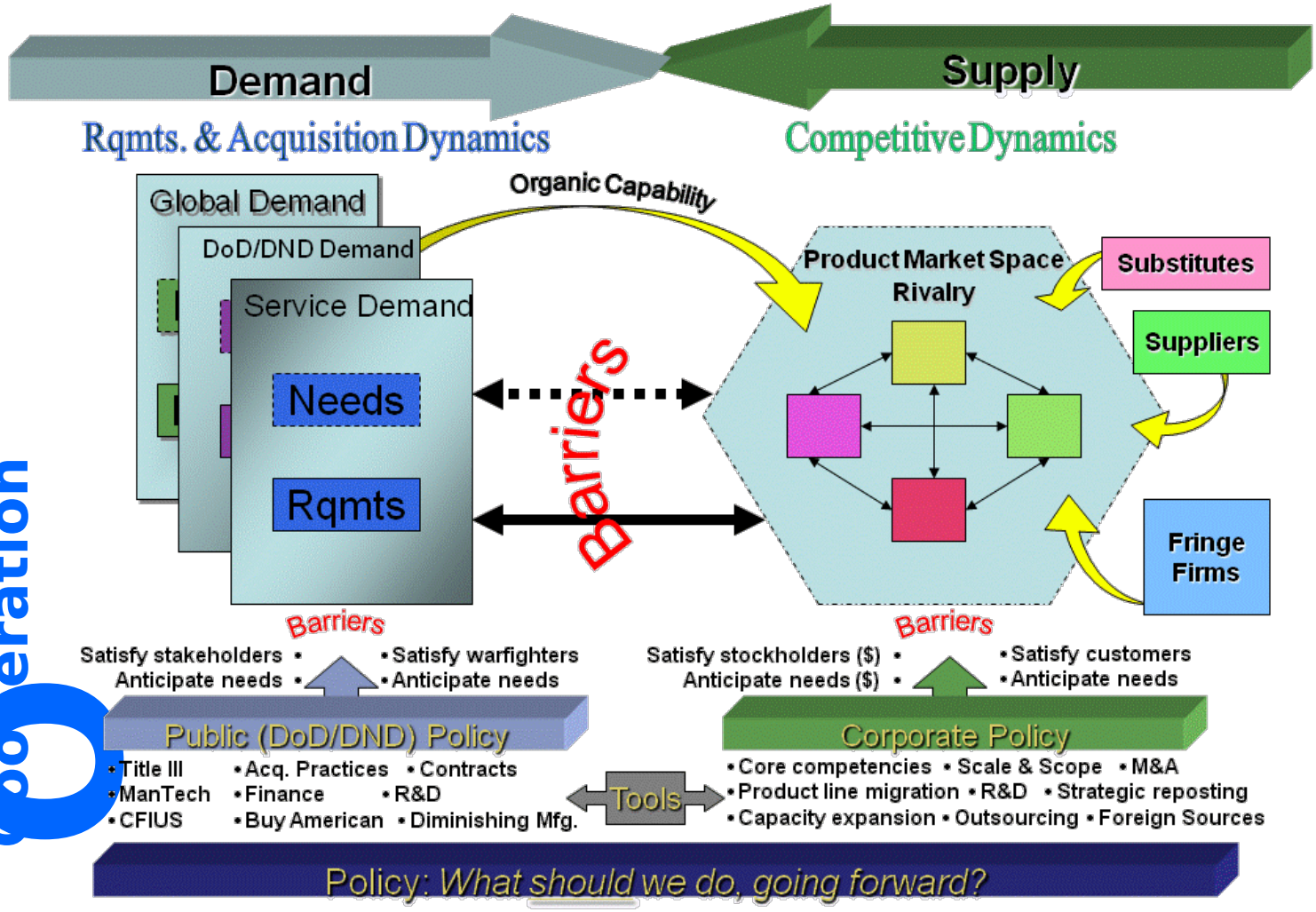
Products & Services

Studies and Assessments

Assessment Framework



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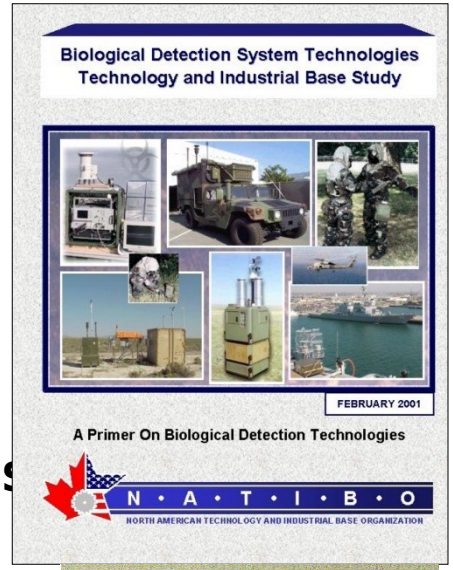
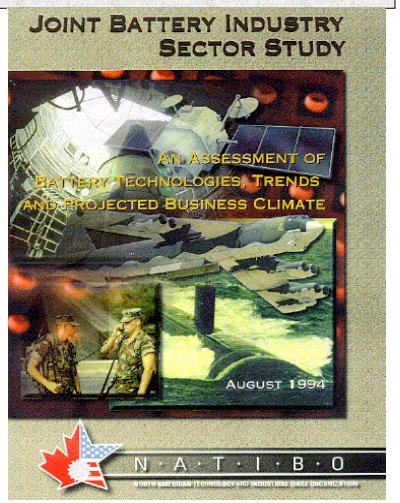
Products & Services

Studies and Assessments

- 1993 Metal Matrix Composites Study
- 1994 Battery Industry Study
- 1996 Collaborative Virtual Prototyping Study
- 1996 Ion Beam Processing Study
- 1998 Corrosion Detection Technologies Study
- 1999 Rechargeable Battery Study
- 2001 Biological Detection Systems Technology Study
- 2001 Collaborative Opportunities in DMSMS
- 2003 Small Gas Turbine Engine Study
- 2004 First Responder Technologies Study
- 2006 Fuel Cells for LAV Application
- 2006 Cooperative Homeland Defense and Equipment for First Responders
- 2006 Active Protection Systems Collaborative Point Paper (CPP)
- 2007 Border Surveillance CPP


Biological Detection System Technologies
Technology and Industrial Base Study
FEBRUARY 2001
A Primer On Biological Detection Technologies
N · A · T · I · B · O
NORTH AMERICAN TECHNOLOGY AND INDUSTRIAL BASE ORGANIZATION


JOINT BATTERY INDUSTRY SECTOR STUDY
AN ASSESSMENT OF BATTERY TECHNOLOGIES, TRENDS AND PROJECTED BUSINESS CLIMATE
AUGUST 1994
N · A · T · I · B · O

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Products & Services

Studies and Assessments

- **Collaborative Point Papers (CPP)**
- **Goal: Jump-Start potential collaboration in targeted areas**
- **Develop quick turn around product to:**
  - **Highlight an area of interest to the NATIBO SCM**
  - **Prepare short assessment of capabilities/technologies in government and industry in the US and Canada**
  - **Highlight value of using NATIB MOU as mechanism to initiate collaboration**
  - **Identify and create awareness within weapon system/technology management communities across DoD and DND**
- **Resource Requirements**
  - **6-8 week schedule (start to finish)**
  - **Leverage existing resources (information & personnel) of BDWG member organizations**

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Products & Services
Advocacy Activities

- **Web site is primary communication and information dissemination tool available to Co-Chairs**
- **Maintained by OUSD(AT&L)**
- **Recent Web site enhancements:**
  - Reference sections on topics such as information exchange, NATIBO process charts
  - Links to OSD and Service International Program Offices
    - Highlight policies and procedures relevant to use of MOU
    - Knowledgeable points of contact
  - User's Group Area to post comments/testimonials
  - Information on other US/Canada Agreements and what's best to use when
  - Links to useful DoD and DND technology and industrial base sites
- **BDWG Develops additional boilerplates (e.g., TOR for information exchange)**

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Advocacy Activities

- **New Look & new address www.acq.osd.mil/ott/natibo**

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Products & Services
Advocacy Activities

- **Key Organizations/Sites (not inclusive)**
  - **DGIIP, Directorate of Continental Materiel Cooperation (www.forces.gc.ca/admmat/dgiip/dcmc)**
  - **International Cooperation, OUSD(AT&L) (www.acq.osd.mil/ic/)**
  - **Defense Security Cooperation Agency (www.dsca.osd.mil)**
  - **Defense Threat Reduction Agency (www.dtra.mil)**
  - **US Army Defense Exports and Cooperation (https://usasa.army.mil/DASA_DEC)**
  - **US Army Security Assistance Command (www.usasac.army.mil)**
  - **Naval Inventory Control Point, International Programs (www.navicp.navy.mil/of/ofhome)**
  - **Air Force Security Assistance Center (https://rock.afsac.wpafb.af.mil)**
  - **Deputy Under Secretary of the Air Force, International Affairs (www.safia.hq.af.mil)**
  - **Canadian Forces (www.airforce.forces.gc.ca , www.army.forces.gc.ca , www.navy.forces.gc.ca)**

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Products & Services
Advocacy Activities

NATIBO provides bridge to resources in both US and Canada

- **Department of National Defence**
  - Canadian Forces Experimentation Centre
  - Department of National Defence
  - DND International and Industry Programs Division (DGIIP)
  - DND Aerospace Engineering Test Establishment
  - Defence Research and Development Canada
    - Atlantic (DRDC-Atlantic)
    - Ottawa (DRDC-Ottawa)
    - Suffield (DRDC - Suffield)
    - Toronto (DRDC-Toronto)
    - Valcartier (DRDC-Valcartier)
  - Munitions Experimental Test Centre (METC)
  - Quality Engineering Test Establishement (QETE)
- **Department of Defense (DoD)**
  - Department of Defense - DefenseLink
  - Director, Defense Research & Engineering (DDR&E)
  - DoD TechMatch (TechMatch) Program
  - DoD Manufacturing Technology (ManTech) Program
  - TechTRANSIT
  - DoD Office of Technology Transition

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Products & Services
Advocacy Activities

- **Decision Matrix**
  - **Highlight "Best Vehicle" for cooperative activities**
  - **Provide background (possible web site links) on each**

	Bilateral Defense Cooperation Tools									
Responsibility of	**Science and Technology Establishments**					**Operational/Engineering/Materiel Establishments**				
Activity Program/Agreement	Technical Research and Development Program	Technology Demonstration Program	Defence Industrial Research Program	Multilateral Master Information Exchange Agreement**	The Technical Cooperation Program*	CANUSTEP	**NATIBO**	MDEAs **	Specific MoUs	**DoD Acquisition Framework**
Basic Science	■			■	■			■		
Applied Science	■			■	■			■		
Operational Requirements							■	■		
Concept of Operations		■					■	■		Concept Refinement
Project Documentation							■	■		
Engineering Development							■	■		Technology Development
Proof of Concept/Demonstration		■					■	■		System Development and Demonstration
Production and Deployment										Production and Deployment
Test and Evaluation						■	■			
Sustainment and Maintenance							■			Operations and Support
Commercial Applications			■				■			
Industrial Base			■				■			

* Agreement includes also UK, AU, NZ
** Primarily used by the respective Navies

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Products & Services
Advocacy Activities

NATIBO Conference Display

- Continue attendance at the Defense Manufacturing Conference (DMC) - update display periodically & highlight what the MOU can do for that particular community
- Identify other opportunities
  - Return to a few of the large Service related conferences that are heavily attended by Program Mgrs
  - S&T Conferences
- Develop short promotional tool for desktop presentation

NATIBO
North American Technology and Industrial Base Organization
MISSION
In support of North American national security, the NATIBO facilitates technology and industrial base efforts between the U.S. and Canadian Defense Departments.
MEMORANDUM OF UNDERSTANDING
Allows the leveraging of dollars/resources to reduce redundant efforts through bilateral cooperation on studies and projects relating to defense technology and the industrial base of the United States and Canada.
WORKING GROUPS
Light Armored Vehicle
Fuel Cell
Gas Turbine Engine IBA
First Responder Technology
Soldier System Technology
Future Fire Control Systems
Med Support Vehicle System
Tactical Communication & Info Systems Modeling
Homeland Defense
Critical Infrastructure Protection
NATIBO LED STUDIES
2001 Biological Detection Systems Technology Study
2001 Collaborative Opportunities in DMSMS
2003 Small Gas Turbine Engine Study
2004 First Responder Technologies Study
2006 Fuel Cells, Phase I
2006 Assessment of Ongoing and Potential Military Collaboration on Homeland Defense and Civil Support
2006 Military Materiel Support for Civilian First Responders Study
2007 Border Surveillance Technology
ACTIVITIES SUPPORTED BY MOU
FIRST RESPONDERS STUDY
Supporting Migration of Military Technology to Civilian Agencies
ELFMA
JFIRE
PNVG
RCIAD
TCU
BENEFITS OF USING MOU
Rapid Technology Insertion
Effectively Leverage Dollars and Resources
Promote Tri-Service/Bilateral Cooperation
Reduce Redundancy
Enhance Communication
Commercialize Technologies
Shortened Approval Cycles
OSD Level Support
Information Sharing
BIOLOGICAL DETECTION
RECHARGEABLE BATTERIES & PRIMARY BATTERIES
A FORUM FOR COOPERATION
www.acq.osd.mil/ott/natibo/

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Products & Services
Advocacy Activities

- Information Seminars
  - Conducted 1st seminar Sep07 at Canadian Embassy
  - Target Audience – Service/Agency IA Officers
  - Need to focus on “How to”, process, lessons-learned. Networking and Q&A
- DAU presentations (S&T Managers Course), updating as appropriate
- Topical Workshops
  - Conducted 1st Jun08 in conjunction with Steering Committee meeting (potential for annual workshops)
  - Involve Government, Industry and Academia
  - Allows focused dialog on pre-determined themes
  - Goal is identification of collaborative issues/opportunities

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3 Year Plan

Milestone Schedule

Activity	CY2009	CY2010	CY2011
Steering Committee Mtgs	Vancuver, B.C.	US	Canada
Advocacy Plan			
Alternative Fuels	Web-Site Update	Seminar Initiative	
Critical Infrastructure Protection (CIP)			
Shared Processes: - **Mfg Readiness Assessments** - **TBD**			
Technology/IB Assessments: - **Next Generation Over the Horizon Radar** - **UAVs**			
MOU Revision			

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Work Plans

#1 Advocacy Plan

- **Requirement**
  - Generate interest among program managers and project engineers in using the NATIB MOU for collaborative efforts
  - Provide “How To” Information to potential MOU Customers
  - Disseminate results/products of NATIBO initiatives
- **Expected End Item**
  - Web-Site capability to facilitate collaboration by listing technologies, organization & POCs (may require restricted access area)
  - Develop “NATIBO Why & How” brief for conference, organization visits and leadership forum briefings
  - Conduct Information Seminars and/or Workshops with Government, Industry, Academia
- **Resources**
  - Web site: DUSD(AT&L) support
  - BDWG and Secretariat
- **Key Milestones**
  - Brief at DMC 09 Break-out session
  - Development of workshop/conference topics & schedules - TBD

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Work Plans
#2 Alternative Fuels

- **Requirement**
  - Security of supply and fluctuating market prices highlight need for alternatives to imported oil to support military operations
  - Political, Environmental and National Security considerations heavily influence investment decisions
- **Expected End Item**
  - Air Force initiated study focused on Coal and Gas to Liquid (CTL/GTL) processes/industrial base
    - Pursuing Joint Service-DND participation through NATIBO
    - Scope includes current technology and industrial base activities in North America and discussion of investment factors
  - Report and briefing that consolidates current body of knowledge
  - Recommendations on DoD/DND investment plans
- **Resources**
  - AF funding provided
  - Leverage BDWG to identify and provide access to technical POCs
- **Key Milestones**
  - Develop WG TOR Mar09, POC Taylor
  - Status brief to SCM in June, draft report Sep09

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Work Plans

#3 Critical Infrastructure Protection (CIP)

- **Requirement**
  - Establish shared processes to identify and assess critical components of the Defense Industrial Base in the US and Canada
  - Jointly conduct vulnerability assessments at selected sites and adopt a common geospatial tool (e.g., KDAS, Palanterra) to facilitate analysis of data
- **Expected End Item**
  - Presentation outlining process and findings
  - Detailed Report(s)
  - Recommendations with Action Plans
  - Common toolset
- **Resources**
  - DND: DGIIP and ADCA
  - DoD: ASD(HD), OUSD (AT&L), DCMA
- **Key Milestones**
  - TBD

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Work Plans

#4 Shared Technology and Industrial Base Processes and Practices

- **Requirement**
  - DIB CIP collaboration demonstrated value of developing and sharing common processes related to industrial base
  - Synergistic development, acquisition and sustainment tools and processes encourage collaboration between DoD and DND while eliminating redundancy and optimizing intellectual and financial resources
  - Current assessment techniques for Manufacturing Readiness Levels (MRLs) are mature to the point that they offer a candidate for collaboration, looking to identify other processes
- **Expected End Item**
  - NATIBO sponsored working group with approved TOR
  - Collaborative education process and pilot implementation plans
- **Resources**
  - TBD
- **Key Milestones**
  - PA Approval: TBD

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Work Plans

#5 Technology/Industrial Base Assessments

- **Requirement**
  - Jointly conduct assessments of selected technology and industrial base topics as resources and customer requirements are identified
  - Next Generation Over-the-Horizon Radar
    - DoD and DND are interested in assessing the potential for OTH Radar contributions to fill wide area surveillance gaps in North American defense and security.
    - Increased Importance of Border/Coastal Security
  - Unmanned Systems (Aerial, Marine and Ground)
    - Past 5 years has seen exponential growth in use of unmanned systems by operational forces – requirements evolve in real-time
    - Technology and Industrial base has been responsive in-spite of accelerated demand and supply chain constraints
- **Expected End Item**
  - Reports and Briefings (Reference Source & Decision Document)
  - Customer(s): Canada COM, USNORTHCOM, OSD(AT&L), Services, DHS
- **Resources**
  - TBD
- **Key Milestones**
  - TBD

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Work Plans

#6 MOU Revision/Amendment

- **Requirement**
  - Review the NATIBO MOU for Amendment
  - Include U.S. export control-related language, once finalized
  - Add other improvements as required (e.g. Project Equipment Transfer (PET))
- **Expected End Item**
  - Revised MOU with new export control-related language and other improvements once final export control text is agreed to
- **Resources**
  - DND: DGIIP
  - DoD: OUSD(AT&L), GTID (RDECOM)
- **Key Milestones**
  - TBD: Establish Ad Hoc MOU Review Group
  - TBD: Provide MOU Review Group feedback at next SCM
  - Negotiate MOU Amendment and Finalize Changes
  - TBD (KAREN/STEVE)

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Measures of Success

- **Memorandum of Understanding**
  - Number of Working Groups/TORs in Place
  - Number of NATIB PAs Executed/$ associated with Pas
  - Number of PAs on other vehicles initiated by NATIB Working Groups
  - Approval Cycle Times
  - Number of projects successfully taken to completion
  - New Project Starts
  - Benefits to Government/Industry
- **Studies & Assessments**
  - Time to Initiate and Complete
  - Number of recommendations acted on
  - Number of new studies/assessments initiated
  - Benefits to Government/Industry
- **Advocacy**
  - Web Site Activity
  - Attendance at Display

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Summary

- Proposed Business Plan represents an incremental approach to increasing NATIBO visibility in DoD and DND
- Business Plan reflects small to moderate increase in resources
- Emphasizes a focus on North American Security/Defense
- Overall Goal is for NATIBO to provide increased value to the defense of both countries

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Work Plans

Program Management Trade & Export Control Lessons Learned

- **Requirement**
  - Export Control considerations that impact schedules and costs are often not fully integrated into system acquisition and support plans
  - Sustainment issues regarding export controls and their impact on spares, transportation and technical data are often overlooked
  - Need to capture lessons learned from programs with international partners (JSF, C-130, C-17, etc.)
- **Expected End Item**
  - Build knowledgebase that can be disseminated through various media (DAU and NATIBO websites, documents/reports)
  - Use of survey mechanism (web-based) and additional workshops with Government, Industry, Universities
- **Resources**
  - Coordinate with ACMC & DoD ManTech initiatives to avoid duplication and incorporate rqts.
  - Need to involve subject matter experts (DoD, DND, Commerce & State departments)
- **Key Milestones**
  - Develop draft of web-survey 2nd Qtr CY09